Transparent Cross-Border Migration of Parallel Multi Node Applications*

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Abstract

During the EC funded project HPC4U, we developed a software stack allowing to tranparently checkpoint sequential and MPI based parallel applications. Transparent means that there is no need to modify the application in any way or to execute it in a special manner. Based on the checkpoint data we are able to migrate jobs to other cluster systems and to resume the execution in case of resouce outages.
In this paper, we describe the migration mechanisms within the HPC4U system both for the intra-domain case as well as for the migration over the Grid using Globus and an implementation of the WS-Agreement specification.

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